USER MANUAL

CU-DIN SB 2-CH 10A KNX

EC10430343

CU-DIN SB 4-CH 10A

KNX EC10430350

CU-DIN SB 6-CH 10A KNX

EC10430367

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1 Description

The ESYLUX KNX/EIB series-switching actuator output modules are developed by ESYLUX. KNX/EIB BUS is used to communicate with other KNX devices. The database needs to be downloaded to the switch actuator by using ETS 3.0F/ETS4/ETS5; the document describes how to use the products. Our products are manufactured according to EMC, electrical safety and environmental standards.

The switch actuators are used to control switched loads, such as:

- **Lighting**
- **Motor**
- **Blinds**
- **Heating**
- **Other equipment**

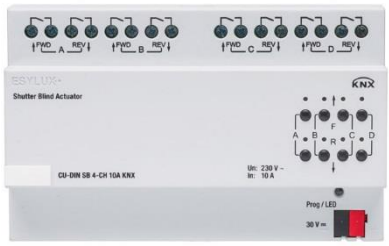
Note: Use this product only as intended (as described in the user instructions). Do not make any changes or alterations as this will render any warrantees null and void. You should check the device for damage immediately after unpacking it. If there is any damage, you should not install the device under any circumstances.
If you suspect that safe operation of the device cannot be guaranteed, you should turn the device off immediately and make sure that it cannot be operated unintentionally.

2 Safety instructions

- **Work on the 230 V power system must be carried out by authorized personnel only, with due regard to the applicable installation regulations.**
- **Switch off the power supply before installing the system.**
- **The 21–30 V ⎓ KNX bus voltage cannot be used as 24 V ⎓ operating or auxiliary voltage.**
- **Max. relay output: 16 A.**

3 Product function

Shutter/blind actuators can be used for 2, 4 and 6 channels with independent AC loads.
The following functions can be set individually for each output channel:



- **Move up/down**
- **Stop/louvre adjustment**
- **Percentage of position control**

Position percentage
Louvre angle percentage

- **Limit travelling control**
- **Response status**

position status
limit position status
automatic status
byte status

- **Voltage failure response**
- **Voltage recovery**
- **Position control**

Move into position (preset position (1-4))
Set position (modification of the preset position via the EIB/KNX-BUS)

- **Safety control**

wind alarm
rain alarm
frost alarm

- **Forced operation**
- **Auto control**

automatic sun protection
automatic heating/cooling

- **Scene control**

Scene number: 1-64

- **Description of shutter/blind actuator type:**

4 Hardware

The technical properties of ESYLUX KNX/EIB shutter/blind actuators are described in the following sections.

4.1 Technical data

Power supply	
• Operating voltage (supplied by the bus)	21–30 V⎓
• Current consumption EIB/KNX (operation)	< 15 mA
• Current consumption EIB/KNX (standby)	< 5 mA
• Power consumption EIB/KNX (operation)	< 450 mW
• Power consumption EIB/KNX (standby)	< 150 mW

Output nominal values			
• Type of device M/R	SB 2-CH	SB 4-CH	SB 6-CH
• Number of contacts	2	4	6
• Rated current	10A	10A	10A
• Power loss per device at max. load	2.7 W	5.4 W	8 W
• Rated voltage	230V ~	230V ~	230V ~

Output switching currents	
• AC operation (cos1 = 0.8) • Fluorescent lighting load • Minimum switching capability	10 A / 230 V 10 A / 230V (300 µF) 0.1 mA / 1 V
• DC current switching capability (ohmic load) output life expectancy	10 A / 12 V DC

Output switching delay without additional DC power			
• Max. delay time of relay per position change (charge time of the capacity)	SB 2-CH 100 ms	SB 4-CH 100 ms	SB 6-CH 100 ms

Connections	
• EIB/KNX	Bus Connection Terminal 0.85 mm Ø, single core
• Load circuits	Screw terminal with slotted head 0.2–4 mm² multi-core 0.4–6 mm² single-core
• Cable shoe	12 mm
• Tightening torque	Max. 0.85 Nm

Operation and display
Red LED and EIB/KNX push button all in one for assignment of the physical address. Factory Settings 15.15.255.

Temperature range	
• Operation	0°C – +45°C
• Storage	-25°C – +55°C
• Transport	-25°C – +70°C

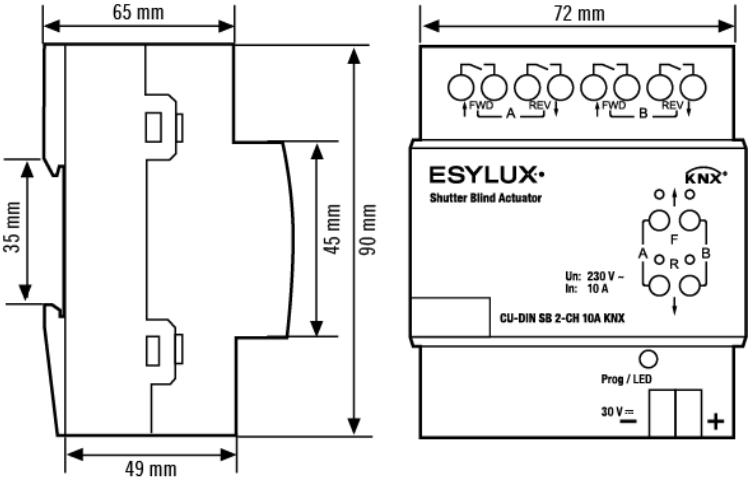
Environmental conditions	
• Humidity	Max. 93%, non-condensing

Appearance design			
• Modular	DIN-Rail modular installation		
• Type (M/R)	SB 2-CH	SB 4-CH	SB 6-CH
• Width W (unit mm)	72	144	216
• Mounting depth (unit mm)	65	65	65
• Weight (unit kg)	0.26	0.49	0.72
• Installation	Use 35 mm mounting rail		
• Mounting position	Electric switching cabinet		
• Material and colour	Plastic, white		

CE Mark in accordance with	
• EMC Standard	2004/1008/EC
• LVD Standard	2006/95/EC
• RoHS	2011/65/EU

Motor **Note: All loads, at 230 V AC**	0,75 KW
Lamps • Incandescent lamp load	 3,5 KW
Low-volt halogen bulbs • Inductive transformer • Electronic transformer • Halogen lamp 230V	 1,0 KW 0,8 KW 1,6 KW
Mercury-vapour bulbs • No compensation • Parallel compensation and double switch	 1,0 KW 0,8 KW
T5/T8 flourescent bulbs • No compensation • Parallel compensation and double switch	 1,0 KW 0,8 KW
Switching performance (contact) • Max. peak inrush current IP (120 µs) • Max. peak inrush current IP (240 µs) • Max. peak inrush current IP (480 µs) • Max. peak inrush current IP (1000 µs)	 600 A 480 A 300 A 170 A

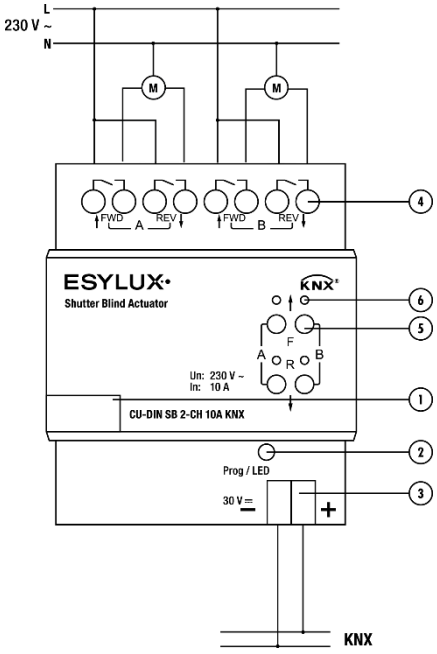
4.2 Dimension drawings



2-CH	4-CH	6-CH
72 mm	144 mm	216 mm

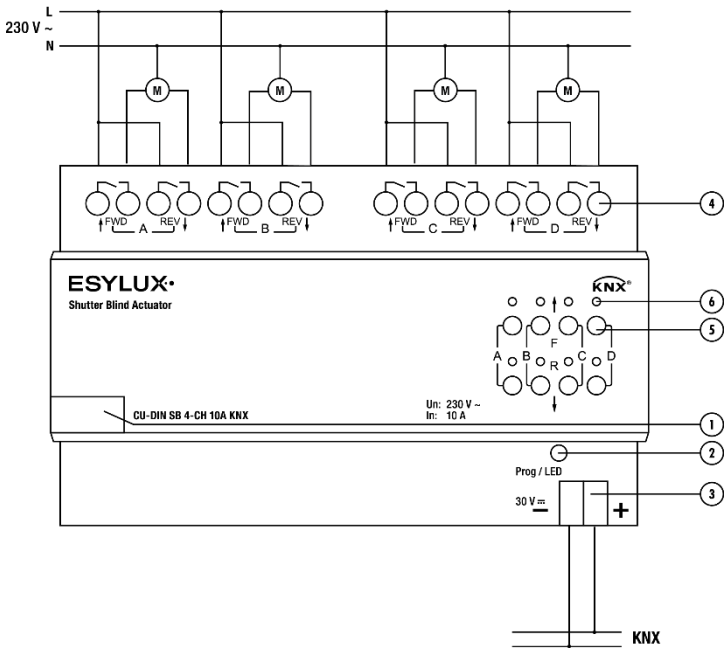
4.3 Wiring diagram

Note: On the input side, the device is to be protected against short circuits with a 16 A circuit breaker.

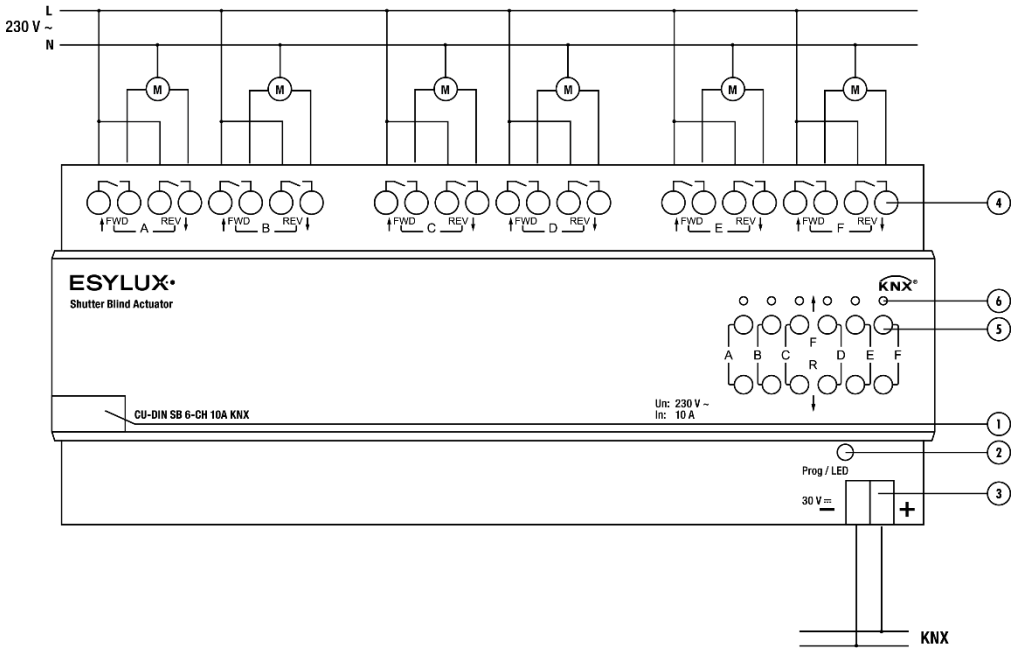


1. Label area
2. Programming button & programming LED
3. KNX/EIB bus connector
4. Terminal for load connection
5. Buttons for Up/Down/Stop/Louvre adjustment
6. Button with LED

CU-DIN SB 2-CH 10 A KNX



CU-DIN SB 4-CH 10 A KNX



CU-DIN SB 6-CH 10 A KNX

Note:
a) Dimensions of the space to be provided for each switch.
b) Dimensions and position of the means for supporting and fixing the switch within this space.
c) Minimum clearance between the various parts of the switch and the surrounding parts where fitted.
d) Minimum dimensions of ventilation opening, if needed, and their correct arrangement.
e) Protective devices (e.g. fuses, automatic protective devices, etc.) to be connected to the load to avoid overloading.

4.4 Maintenance and cautions

- Please read this user manual carefully before operation.
- Do not operate close to interfering devices.
- The site should be ventilated with good cooling environment.
- Take care to damp-proof, quake-proof and dust-proof.
- Avoid rain, other liquids or caustic gas.
- Please contact professional maintenance staff or ESYLUX service centre for repair or fix.
- Remove the dust regularly and do not wipe the unit with volatile liquids like alcohol, gasoline, etc.
- If damaged by damp or liquid, turn off immediately.
- Regularly check the wiring and other related circuits and cables, and replace faulty circuitry when necessary.
- For security, each wiring should be connected to an MCB or fuse
- Installation location should be well-ventilated; pay attention to moisture, shock and dust.

5 Software

The ESYLUX KNX/EIB Shutter/Blind actuator database can be used with ETS3.0F, ETS4 and ETS5 for the programmation. The database must be downloaded from ESYLUX-Webpage.

All parameters and interfaces are described in the following paragraph.
Each output channel of the shutter/blind actuators is independent and the same. It is therefore sufficient to understand how one operates. The following paragraph describes the first output channel in detail.

5.1 Database functions - Overview

The following table provides an overview of the functions and certain parameters of the shutter/blind actuators:

Shutter/blind function	SB 2-CH	SB 4-CH	SB 6-CH
General			
• Weather alarm priority	x	x	x
• Weather alarm monitoring	x	x	x
• Enable/Disable manual operation	x	x	x
• Telegram cycle (heartbeat)	x	x	x
Shutter mode			
• Move shutter up/down	x	x	x
• Stop moving	x	x	x
• Limit travel	x	x	x
• Move to position (1 byte)	x	x	x
Response status			
• Moving position status	x	x	x
• Limit position status	x	x	x
• Auto status	x	x	x
• Byte status	x	x	x
• Reaction following voltage failure	x	x	x
• Reaction following voltage recovery	x	x	x
Position control			

• Set position (1 bit)	x	x	x
• Move to position (1 bit)	x	x	x
Safety control			
• Wind alarm from bus	x	x	x
• Rain alarm from bus	x	x	x
• Frost alarm from bus	x	x	x
• Forced operation	x	x	x
Auto control			
• Auto 1 function for sun	x	x	x
• Auto 2 function for heating/cooling	x	x	x
Scene control			
• Scene no. 1-64	x	x	x
Blind mode			
• Move blinds up/down	x	x	x
• Stop moving/Louvre adjustment	x	x	x

Table 1: Database application overview.

Note: Each function and mode can only be used alone, however, the "Louvre adjustment" function can be used with the Blind Actuator mode.

5.2 Object/Association/Group address definition

The following table shows the max. number of communication objects, associations and group addresses. The object is assigned to certain functions of the channel output pages. If the functions are activated, the corresponding objects will be available. One or more group addresses can be assigned to an object. The association will connect group addresses to the object.

Type	Max. number of communication objects	Max. number of associations	Max. number of group addresses
CU-DIN SB 2-CH 10 A	70	254	254
CU-DIN SB 4-CH 10 A	130	254	254
CU-DIN SB 6-CH 10 A	190	254	254

Table 2: Overview of the max. number of objects, max. number of associations and max. number of group addresses.

5.3 Function parameter “General”

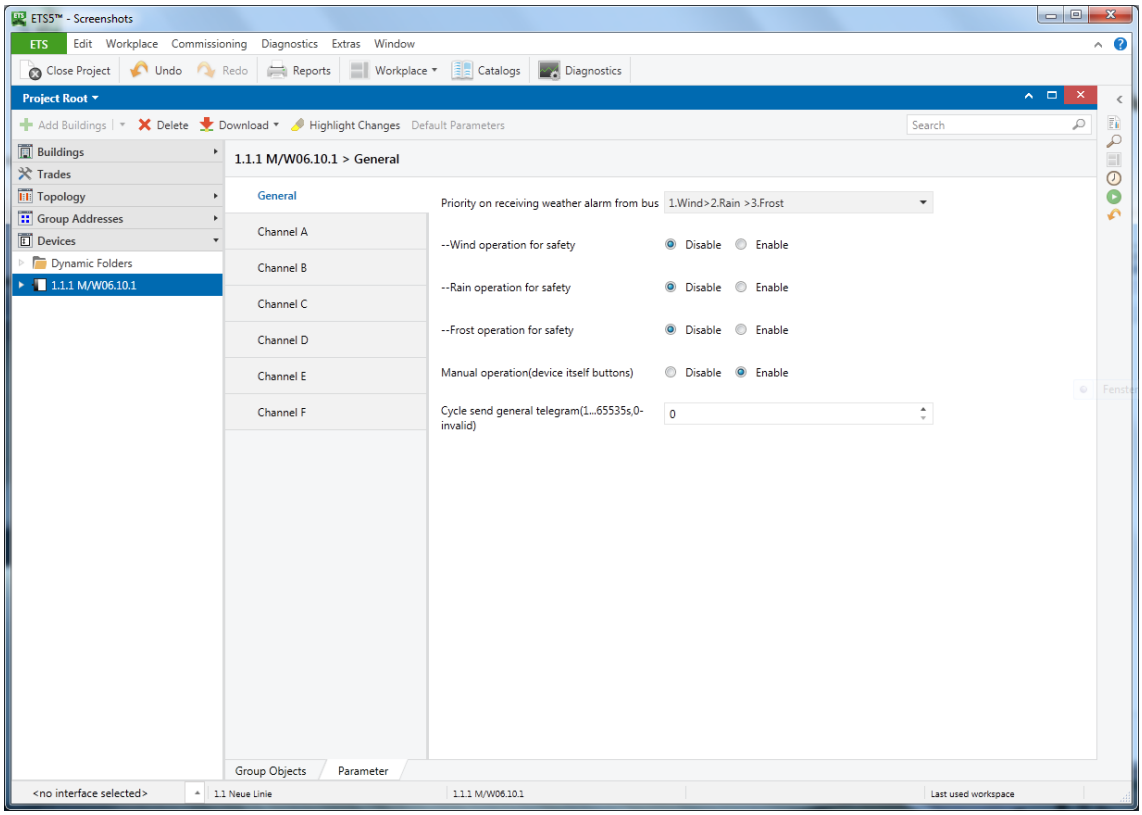


Fig 1: “General” parameters window.

Some common functions can be set in the General parameter window.

- **Priority in which weather alarms are received from the bus**

There are six different configuration combinations when setting the priority of weather alarms.

Options:
1. Wind > 2. Rain > 3. Frost
1. Wind > 2. Frost > 3. Rain
1. Rain > 2. Wind > 3. Frost
1. Rain > 2. Frost > 3. Wind
1. Frost > 2. Wind > 3. Rain
1. Frost > 2. Rain > 3. Wind

The weather alarm signal is valid according to the priority setting. If the shutter/blind actuator receives more than one weather alarm signal at any one time, the weather signal with the highest priority is valid.

- **Wind operation for safety**

If set to Enable, "Weak wind alarm received", "Slight wind alarm received", "Strong wind alarm received" and "Monitoring wind period [1-2000 s, 0 - invalid]" are available.

Options: **Disable**
Enable

- **Weak wind alarm received**
- **Slight wind alarm received**
- **Strong wind alarm received**

If set to Enable, the corresponding communication objects are available.

Options: **Disable**
Enable

Disable: disables the "(weak/slight/strong) wind alarm received" communication object.

Enable: enables the "(weak/slight/strong) wind alarm received" communication object.

- **Rain operation for safety**
- **Frost operation for safety**

If set to Enable, "Monitoring rain period [1-2000 s, 0 - invalid]", "Monitoring frost period [1-2000 s, 0 - invalid]" and the corresponding communication objects are available.

Options: **Disable**
Enable

Disable: disables the "Monitoring rain/frost period" setting and the rain/frost/wind received" communication object.

Enable: enables the "Monitoring rain/frost period" setting and the "rain/frost/wind received" communication object.

- **Monitoring wind period (1-2000 s, 0 – invalid)**
- **Monitoring rain period (1-2000 s, 0 – invalid)**
- **Monitoring frost period (1-2000 s, 0 – invalid)**

The range of the cyclical monitoring period is 0 to 2000 s. If the parameter is set to zero, this function will not be available.
Options: **0-2.000 s**
The weather sensor sends a telegram which is cyclically monitored by the shutter/blind actuator. If the weather alarm signal is not received by the shutter/blind actuator within the monitoring period, the shutter or blind moves to the set alarm position. If the weather sensor sends a weather alarm signal and the shutter/blind actuator receives the signal, the shutter/blind immediately moves to the set alarm position. The monitoring period restarts after a telegram is received. The shutter/blind actuator monitoring period is set to be at least two to three times as long as the cyclical sending time of the weather sensor, to avoid the signal being received and the shutter/blind reacting too quickly and immediately moving to the set alarm position.

- **Cycle send general telegram (1-65535 s, 0 - invalid)**

The range of the parameter is 0 to 65535 s. Zero as the parameter value disables the function, other parameter values enable this function.
Options: **0-65535 s**
If the parameter is set to non-zero, the device will send telegram data cyclically when it times out. It alternates between sending the values 0 and 1.

5.4 Function parameter “Channel A”

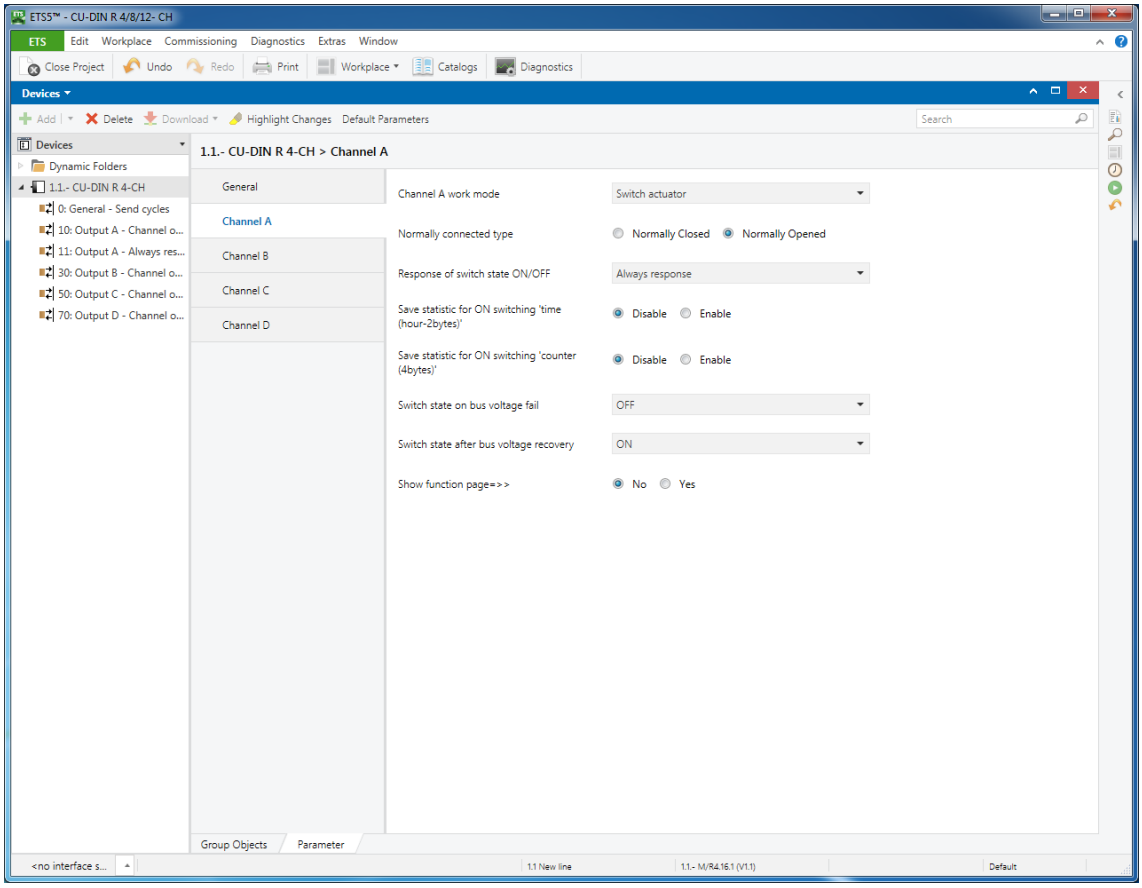


Fig 2: “Channel A” window.

You can set some common functions in the "Channel N" parameter windows. After selecting a function and downloading the database to the device, the device will work in accordance with the selected function.

- **Selecting the operating mode**

The operating mode function can be selected via two parameters.
Options: **Shutter**
Blind
Shutter: selects Shutter mode.
Blind: selects Blind mode.
The Shutter and Blind modes function similarly, except in Blinds mode there are more parameters and communication objects concerning louvre control. If the blind function is understood, then the shutter function is therefore understood.

5.5 Channel mode “Blinds”

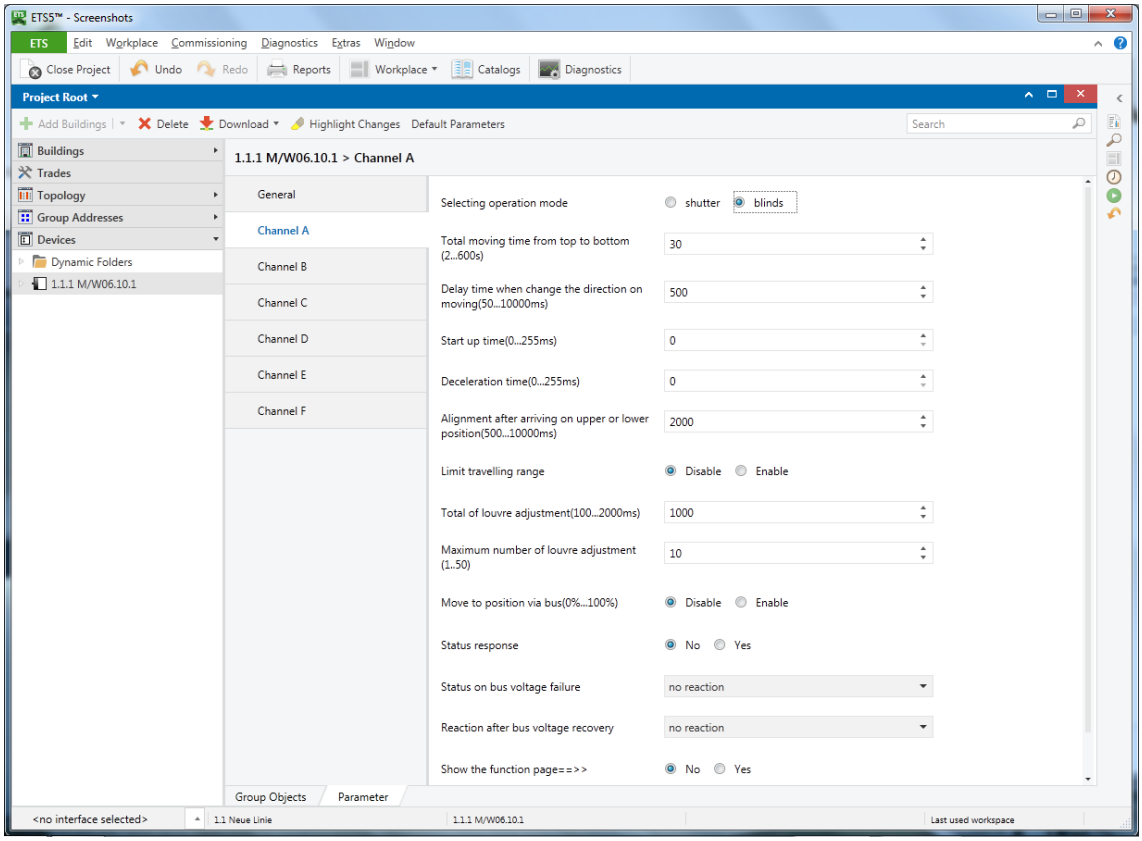


Fig 3: Shutter/blind actuator window.

More functions can be set up in this mode; the following section provides a detailed description of the Blind mode.

- **Total moving time from top to bottom (s)**

Options: **2-600 s**
Sets the total moving time for the shutter/blind moving from top to bottom.

- **Delay when changing the direction of movement (ms)**

Options: **50-10,000 ms**
Set the delay for when the shutter/blind changes its direction of movement, so that the direction does not change immediately while the shutter/blind is moving.

- **Start-up time (ms)**

Options: **0-255 ms**
Sets the drive start-up time.

- **Deceleration time (ms)**

Options: **0-255 ms**
Sets the drive deceleration time.

- **Alignment after arriving at the upper or lower position (ms)**

Sets for how long the motor has to drive in the opposite direction to adjust the louvres after arriving at its upper or lower position.

- **Limit travelling range**

If Enable is selected, the shutter/blind travelling range can be set.
Options: **Disable**
Enable
Disable: Disables the "Upper/Lower limit" setting and the limit travelling communication object.
Enable: Enables the "Upper/Lower limit" setting and the limit travelling communication object.

- **Upper limit 0-100%**
- **Lower limit 0-100%**

Sets the "Upper limit" or "Lower limit" parameter values.

- **Total louvre adjustment 100-2000 ms**

The parameter is only set in Blind mode.
Options: **100-2000 ms**
Sets the total louvre adjustment time from 0% (0) to 100% (255).

- **Maximum louvre adjustment value 1-50**

The parameter is only set in Blind mode.
Options: **1-50**
Sets the maximum louvre adjustment value from 0% (0) to 100% (255).

- **Move to position via bus 0%-100%**

If set to Enable and the "move to position" and "move louvre to position (only in Blind mode)" communication objects are available, the shutter/blind can be moved into position. In Blind mode only, the louvres can also be adjusted to any angle according to the communication objects value received.
Options: **Disable**
Enable
Disable: Disables the "move to position" and "move louvre to position (only in blind mode)" objects.
Enable: Enables the "move to position" and "move louvre to position (only in blind mode)" objects.

- **Response status:**

If set to Yes, the status parameter configuration is available.
Options: **No**
Yes
No: response status is not available.
Yes: response status is available.

- **Send position: 0%-100%**

The shutter/blind actuator sends status values according to the current position and louvre position values. However, the louvre position status communication object is available and sent in Blind mode only.
Options: **Disable**
Enable
Disable: disables the current position/louvre position communication object.
Enable: enables the current position/louvre position communication object.

- **Send limit position reached**

The shutter/blind actuator sends the status after the shutter/blind arrives at its upper or lower position.
Options: **Disable**
Enable
Disable: disables the limit position status communication.
Enable: enables the limit position status communication.

- **Send automatic control status**

Regardless of whether automatic control is activated or deactivated, the shutter/blind actuator sends its current status.
Options: **Disable**
Enable
Disable: disables the automatic control status communication object.
Enable: enables the automatic control status communication object.

- **Send forced operation alarm status**

Regardless of whether forced operation is activated or deactivated, the shutter/blind actuator sends its current status.
Options: **Disable**
Enable
Disable: disables the forced operation status communication object.
Enable: enables the forced operation status communication object.

- **Bus voltage failure status**

Sets the shutter/blind reaction following bus voltage failure.
Options: **No reaction**
Up
Down
Stop
Up: the shutter/blind moves up following bus voltage failure.
Down: the shutter/blind moves down following bus voltage failure.
Stop: the shutter/blind stops following bus voltage failure.

- **Reaction following bus voltage recovery**

Sets the shutter/blind reaction following bus voltage recovery
Options: **No reaction**
Up
Down
Stop
Set position
Up: the shutter/blind moves up following bus voltage recovery.
Down: the shutter/blind moves down following bus voltage recovery.
Stop: the shutter/blind stops following bus voltage recovery.
Set position: set position or louvre value is available.

- **Output position value**

Options: **(0%-100%)**
Sets the position value

- **Output louvre value**

Options: **(0%-100% or invalid)**
Sets the louvre value range.

5.5.1 Channel function

The following will describe the parameters for setup of the channel.

- **Show the function page**

Options: **No**
Yes
If set to Yes, the channel function page is shown. The function page includes Position control, Safety control, Auto control and Scene control. For details see the following sections

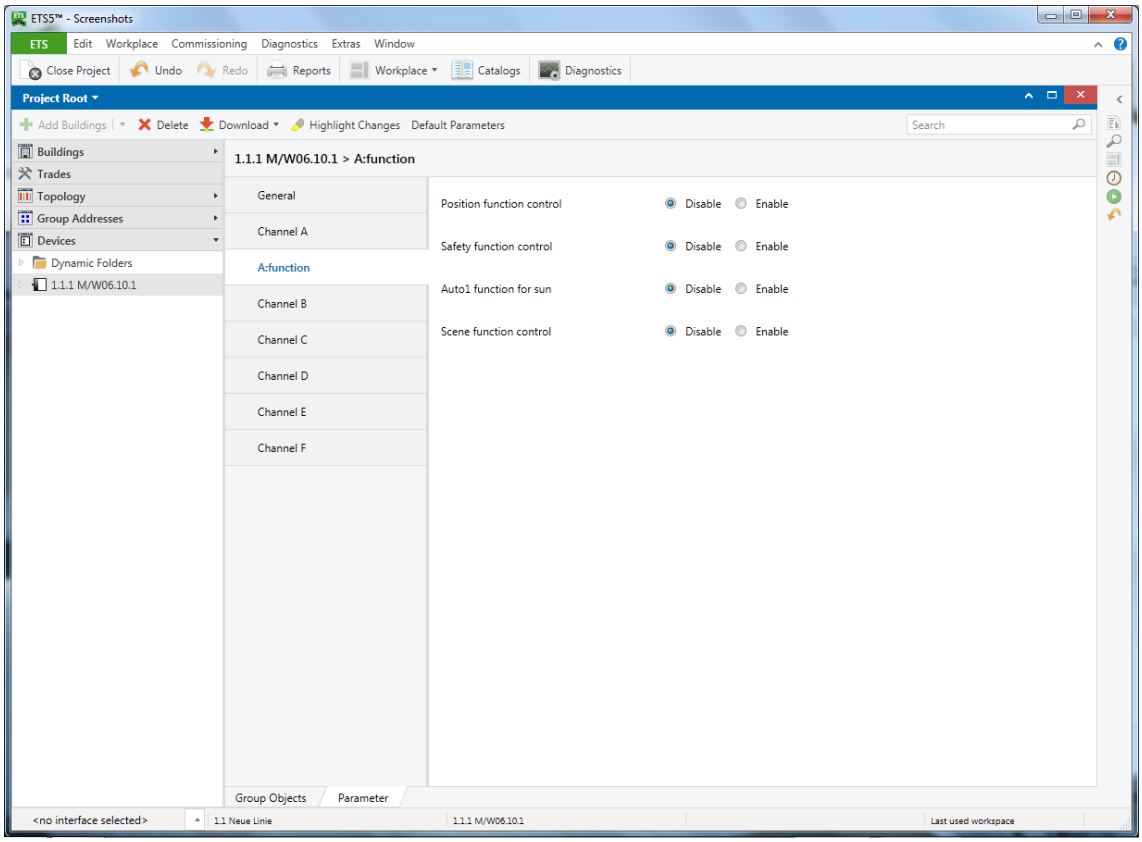


Fig 4: Channel function window.

Normally, each channel function is disabled. When enabled, the channel function is valid

- **Position function control**

If set to Enable, the Position function control will be enabled.
Options: **Disable**
Enable
Disable: The Position function is disabled.
Enable: The Position function is enabled.

- **Safety function control**

If set to Enable, the Safety function will be enabled.
Options: **Disable**
Enable
Disable: The Safety function is disabled.
Enable: The Safety function is enabled.

- **Auto 1 function for sun**

If set to Enable, the Auto 1 function will be enabled, "Auto 2 function for heating/cooling" is also available.
Options: **Disable**
Enable
Disable: The Auto 1 function is disabled.
Enable: The Auto 1 function is enabled.

- **Auto 2 function for heating/cooling**

If set to Enable, the Auto 2 function will be enabled.
Options: **Disable**
Enable
Disable: The Auto 2 function is disabled.
Enable: The Auto 2 function is enabled.

- **Scene function control**

If set to Enable, the Scene function will be enabled.
Options: **Disable**
Enable
Disable: The Scene function is disabled.
Enable: The Scene function is disabled.

5.5.2 Channel function “Position”

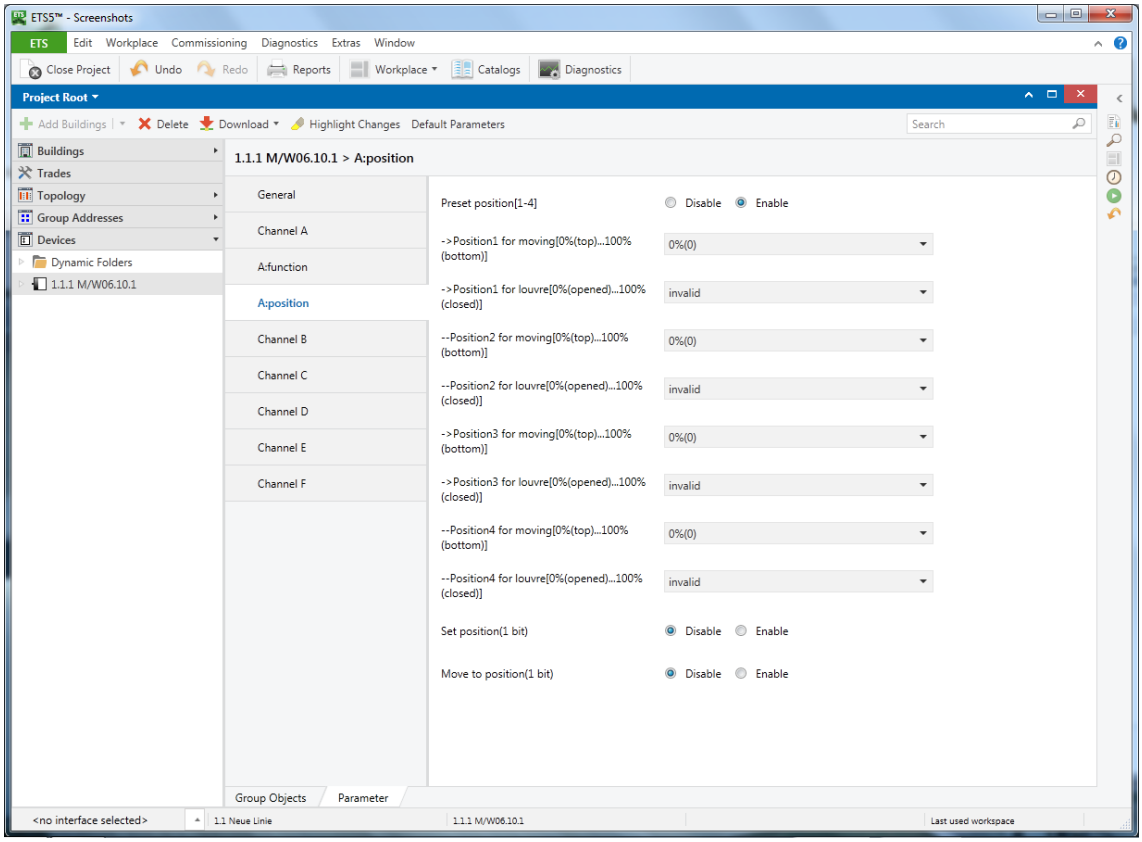


Fig 5: Position function window.

The position function is as follows:

- **Preset position (1-4)**

If set to Enable, the following parameters are available.
Options: **Disable**
Enable
Disable: disables the preset settings.
Enable: enables the preset settings.

- **Position 1 for moving (0% (top) - 100% (bottom))**
- **Position 1 for louvre (0% (opened) - 100% (closed)) (only in blind mode)**

- **Position 2 for moving (0% (top) - 100% (bottom))**
- **Position 2 for louvre (0% (opened) - 100% (closed)) (only in blind mode)**

- **Position 3 for moving (0% (top) - 100% (bottom))**
- **Position 3 for louvre (0% (opened) - 100% (closed)) (only in blind mode)**

- **Position 4 for moving ((0% (top) - 100% (bottom))**
- **Position 4 for louvre (0% (opened) - 100%(closed)) (only in blind mode)**

The preset position is set using this parameter**.**

- **Set position (1 bit)**

The preset position is updated using a (1 bit) telegram**.**
Options: **Disable**
Enable
Disable: disables set position communication object.
Enable: enables set position communication object.

- **Move to position (1 bit)**

The shutter/blind moves to the preset position when this communication object receives a telegram with the value "1 bit".
Options: **Disable**
Enable
Disable: disables the move to position (1 bit) communication object.
Enable: enables the move to position (1 bit) communication object.

5.5.3 Channel function “Safety”

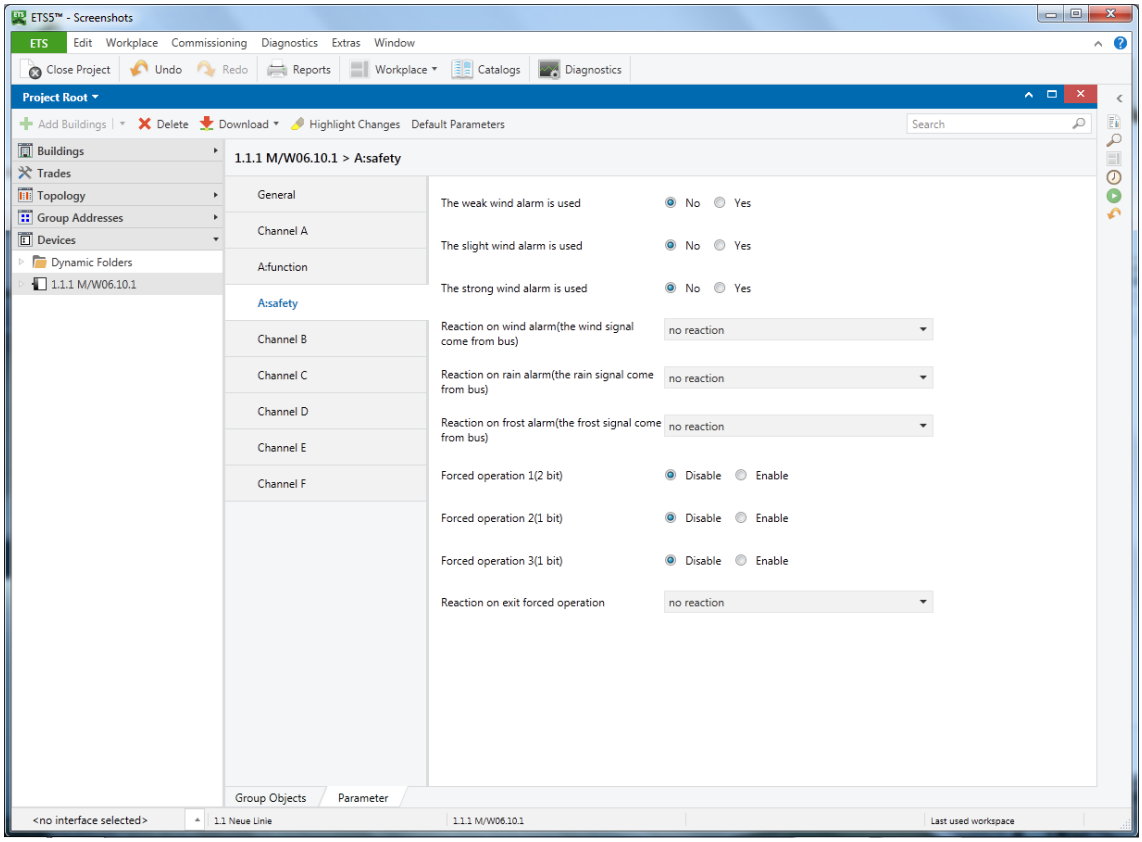


Fig 6: Safety function window

- **The weak wind alarm is used**
- **The slight wind alarm is used**
- **The strong wind alarm is used**

If set to Yes, the corresponding communication object is valid.
Options: **No**
Yes
No: the (weak/slight/strong) wind alarm signal is not used.
Yes: the (weak/slight/strong) wind alarm signal is used.

- **Reaction to wind alarm (the wind signal comes from the bus)**
- **Reaction to rain alarm (the rain signal comes from the bus)**
- **Reaction to frost alarm (the frost signal comes from the bus)**

Set the shutter/blind reaction with this parameter. The wind alarm, rain alarm and frost alarm is interrupted if the remote control (such as up/down or stop/louvre adjustment), manual operation or forced operation is used.
Options: **No reaction**
Up

Down
Stop
Set louvre position only (only in Blind mode)

No reaction: the shutter/blind does not move when the wind/rain/frost signal is received.
Up: the shutter/blind moves up when the wind/rain/frost signal is received.
Down: the shutter/blind moves down when the wind/rain/frost signal is received.
Stop: the shutter/blind stops when the wind/rain/frost signal is received.
Set louvre position only: sets the shutter/blind adjustment louvre position.

The remote control includes the following:
1. Move up/down
2. Stop/Louvre adjustment
3. Move to position (1 byte)/Move louvre to position (only in Blind mode)
4. Limit travelling control
5. Move to position (one bit preset position (1-4))
6. Set position (modification of the preset position via the EIB/KNX)
7. Scene control

- **Output louvre value**

Options: **(0%-100%)**
Sets the louvre value range

- **Forced operation 1 (2 bit)**

If set to Enable, the corresponding communication object can receive "2 bit" telegrams and control the shutter/blind up/down movement. All operation is interrupted if forced operation is used.
Options: **Disable**
Enable
Disable: disables the forced operation communication object. Enable: enables the forced operation communication object.

- **Forced operation 2 (1 bit)**
- **Forced operation 3 (1 bit)**

If set to Enable, the corresponding communication object can receive "1 bit" telegrams and control the shutter/blind with the parameter value. All operation is interrupted if forced operation is used.
Options: **Disable**
Enable
Disable: disables the forced position setting and forced operation communication object.
Enable: enables the forced position setting and forced operation communication object.

- **Reaction when forced operation is closed**

Sets the shutter/blind reaction when forced operation is closed and other operations are able to operate.

Options: **No reaction**
Up
Down
Stop
Last position

No reaction: the shutter/blind does not move when forced operation is closed.
Up: the shutter/blind moves up when forced operation is closed.
Down: the shutter/blind moves down when forced operation is closed.
Stop: the shutter/blind stops when forced operation is closed.
Last position: the shutter/blind moves to the last position when forced operation is closed.

5.5.4 Channel function “Auto 1”

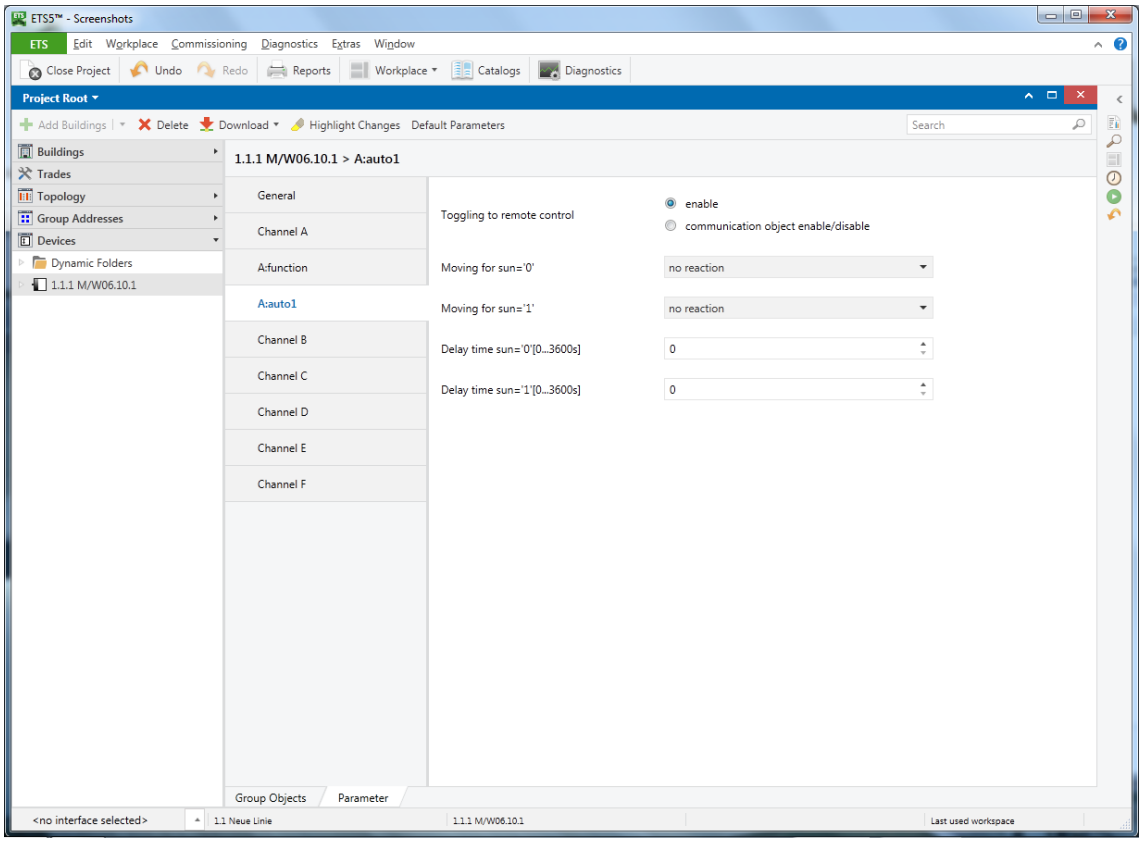


Fig 7: Auto 1 function window.

- **Toggling to remote control**

Set to enable remote control or enable/disable remote control with the communication object.

Options: **Eenable**
communication object enable/disable

Enable: enable remote control.
Communication object enable/disable: enable/disable remote control with communication object.

- **Move for sun = "0" (no sun)**
- **Move for sun = "1" (sun)**

If the "Sun=0 or 1" communication object receives a telegram with the value "0", the shutter/blind moves into position according to the setting of the "Moving for sun = 0" parameter. If the "Sun=0 or 1" communication object receives a telegram with the value "1" , the shutter/blind moves into position according to the setting of the "Moving for sun = 1" parameter.

If set to "Receive percentage value (8 bits)", then the shutter/blind moves into position or adjusts the louvre position according to received object value (8 bit). However, the louvre position can only be adjusted in Blind mode. All operations are higher priority than auto control, therefore auto control is interrupted if another operation is carried out.

Options: **No reaction**
Up
Down
Stop
Position 1 to Position 4
Receive percentage value (8 bits)

No reaction: the shutter/blind does not move when there is (no) sun.
Up: the shutter/blind moves up when there is (no) sun.
Down: the shutter/blind moves down when there is (no) sun.
Stop: the shutter/blind stops when there is (no) sun.
Position 1 to Position 4: the shutter/blind moves to the preset position when there is (no) sun.
Receive percentage value (8 bits): the shutter/blind reacts according to the received value.

- **Delay for sun = 0 (s)**
- **Delay for sun = 1 (s)**

Options: **0-3600 s**

Sets the delay time "sun=0" or "sun=1" after receiving a telegram value and avoids the shutter/blind moving immediately.

5.5.5 Channel function “Auto 2”

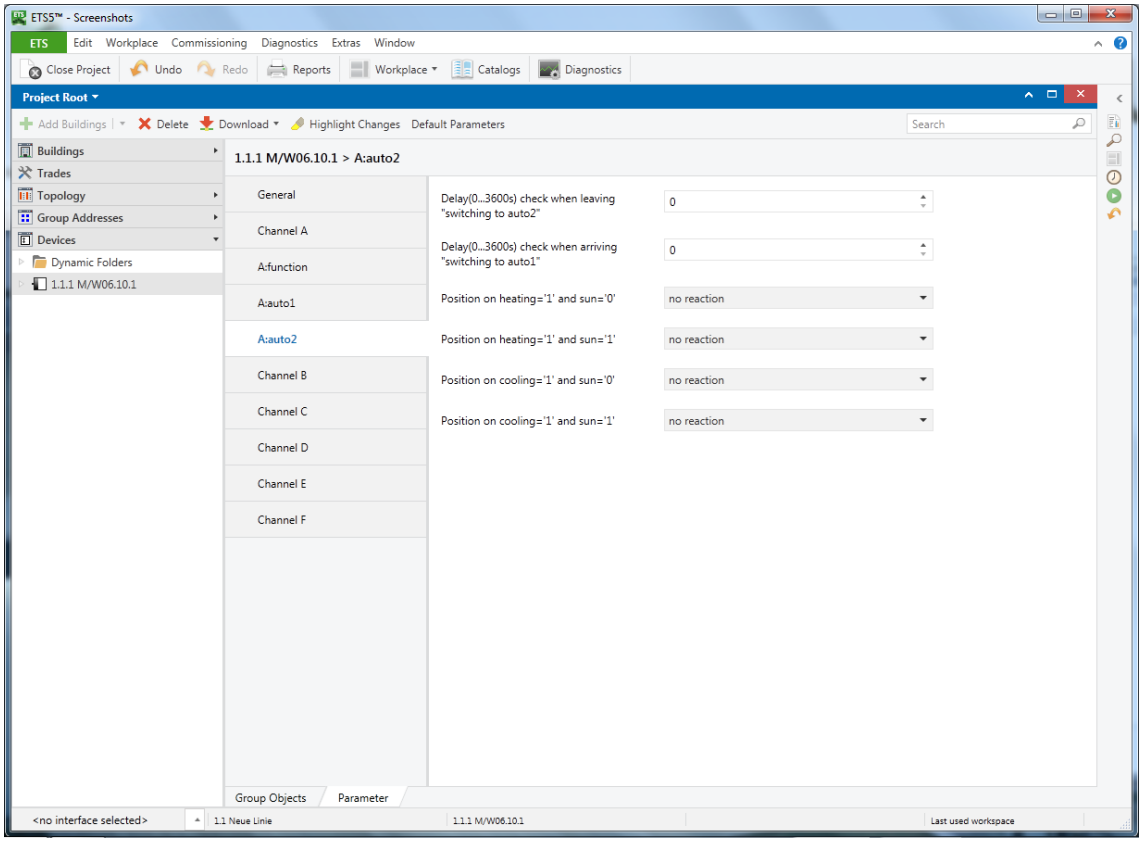


Fig 8: Auto 2 function window

- **Delay (0-3600 s) check when leaving "switching to auto 2" (s)**
- **Delay (0-3600 s) check when arriving "switching to auto 1" (s)**

Options: **0-3600 s**

Set presence delay time (arrival/departure). If a person enters the room, the delay starts when the "Delay (0-3600 s) check on arrival "switching to auto 1" [s]" parameter configuration value is exceeded. The shutter/blind switches to auto 1 (sun protection). If a person leaves the room, the delay starts when the "check on departure "switching to auto 2" [s]" parameter configuration value is exceeded. The shutter/blinds switches to auto 2 (heating/cooling control). The heating/cooling control is used to move to position according to the changing temperature. For example, if there is sun (sun="1") and heating is required (heating="1"), the shutter/blind opens to increase the heat in the room. If there is no sun (sun="0") and cooling is required (cooling="1") the shutter/blind is closed to keep the heat in the room.

- **Position for heating = "1" and sun = "1"**
- **Position for heating = "1" and sun = "0"**
- **Position for cooling = "1" and sun = "1"**
- **Position for cooling = "1" and sun = "0"**

The shutter/blind moves to the corresponding setting position if auto heating/cooling is activated. However, all operations are higher priority than auto control, therefore auto control is interrupted if another operation is carried out.

Options: **No reaction**
Up
Down
Stop
Position 1 to Position 4

No reaction: the shutter/blind does not move when heating/cooling and sun/no sun.
Up: the shutter/blind moves up when heating/cooling and sun/no sun.
Down: the shutter/blind moves down when heating/cooling and sun/no sun.
Stop: the shutter/blind stops when heating/cooling and sun/no sun.
Position 1 to Position 4: the shutter/blind moves to the preset position when heating/cooling and sun/no sun.

5.5.6 Channel function “Scene”

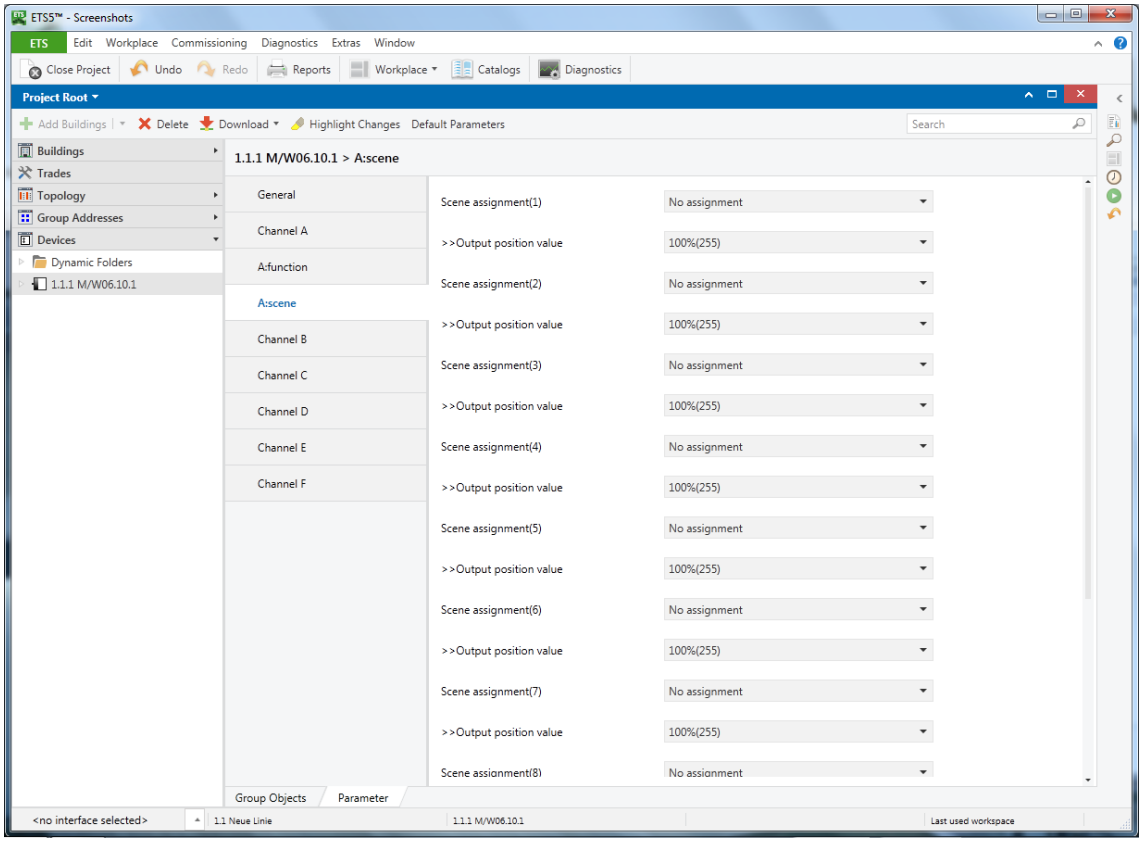


Fig 9: Scene function window.

Each channel has 10 scenes which can be stored. Each scene can be set to 0% to 100%.

The scene is activated by receiving a telegram value from the bus. The value of the telegram (bit 0–6) is equal to a scene number. The bit seven of the telegram must be 0 to start the scene.

The scene is stored by receiving a telegram value from the bus. The value of the telegram (bit 0–6) is equal to a scene number. The scene state is the current shutter/blind position state. The bit seven value of the telegram must be 1 to store the scene.

- **Scene assignment (scene 1-64 or no assignment)**

Options: **No assignment**
Scene No. 01
Scene No. 02
Scene No. ...
Scene No. 64

The scene number is between 1 and 64, the value is between 0 and 63, or no assignment.

- **Output position value**

Options: **0% (0) - 100% (255)**

The output position value range can be set to 0% (0) - 100% (255).

6 Communication objects description

This section will introduce the communication objects, the objects will show by enabling the function.

Note: take channel A as an example; other channels are the same as A.

6.1 Objects “General” and “Output A”

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
0	General	Send cycles			1 bit	C	R	-	T	-	enable	Low
1	General	Weak wind alarm received			1 bit	C	-	W	-	U		Low
2	General	Slight wind alarm received			1 bit	C	-	W	-	U		Low
3	General	Strong wind alarm received			1 bit	C	-	W	-	U		Low
4	General	Rain alarm received			1 bit	C	-	W	-	U		Low
5	General	Frost alarm received			1 bit	C	-	W	-	U		Low
10	Output A	Move blinds up/down			1 bit	C	-	W	-	U	up/down	Low
11	Output A	Adjust louvre/Stop moving			1 bit	C	-	W	-	U		Low
40	Output B	Move shutter up/down			1 bit	C	-	W	-	U	up/down	Low
41	Output B	Stop moving			1 bit	C	-	W	-	U		Low
70	Output C	Move shutter up/down			1 bit	C	-	W	-	U	up/down	Low
71	Output C	Stop moving			1 bit	C	-	W	-	U		Low
100	Output D	Move shutter up/down			1 bit	C	-	W	-	U	up/down	Low
101	Output D	Stop moving			1 bit	C	-	W	-	U		Low
130	Output E	Move shutter up/down			1 bit	C	-	W	-	U	up/down	Low
131	Output E	Stop moving			1 bit	C	-	W	-	U		Low
160	Output F	Move shutter up/down			1 bit	C	-	W	-	U	up/down	Low
161	Output F	Stop moving			1 bit	C	-	W	-	U		Low

NO.	Object name	Function	Flags	Data type
0	General	Send cycles	C R T	EIS1 DPT 1.003 1 bit
This communication object is always active and valid. Invert the value and send telegram to bus in next frame. e.g. last telegram value is “1”, next telegram value is “0”				

NO	Object name	Function	Flags	Data type
1	General	Weak wind Alarm received	C W U	EIS1 DPT 1.005 1 bit
2	General	Slight wind	C W U	EIS1

		Alarm received		DPT 1.005 1 bit
3	General	Strong wind Alarm received	C W U	EIS1 DPT 1.005 1 bit
4	General	Rain Alarm received	C W U	EIS1 DPT 1.005 1 bit
5	General	Frost Alarm received	C W U	EIS1 DPT 1.005 1 bit
These communication objects are used to receive telegrams cyclically. If the object receives a telegram with value="1" or doesn't receive a telegram within the period, the shutter/blind moves to the "Reaction to wind/rain/frost alarm" setting. If the object receives a telegram with value="0" within the monitoring period, the shutter/blind moves to the "Reaction to wind/rain/frost alarm" setting. The monitoring period restarts after the object receives each telegram.				

NO	**Object name**	**Function**	**Flags**	**Data type**
10, etc.	Output A	Move shutter up/down Move blind up/down	C W U	EIS1 DPT 1.008 1 bit
This communication object is used to move the shutter/blind. If the object receives the value "0", the shutter/blind moves upwards. If the object receives the value "1", the shutter/blind moves downwards. The shutter/blind will stop automatically when it arrives at its upper or lower end position.				
11, etc.	Output A	Stop moving Adjust Louvre/Stop moving	C W U	EIS1 DPT 1.007 1 bit
This communication object is used to stop moving or adjust the louvre. If the shutter/blind is moving, the shutter/blind stops when a telegram is received at this communication object, no matter whether "1" or "0" is received. In Blind mode only, if the blind status is stop, the louvre is adjusted upwards after receiving value "0" or adjusted downwards after receiving value "1". In Shutter mode, if the shutter status is stop and a telegram is received, the shutter/blind does not move.				

6.2 All objects with channel A

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
0	General	Send cycles			1 bit	C	R	-	T	-	enable	Low
1	General	Weak wind alarm received			1 bit	C	-	W	-	U		Low
2	General	Slight wind alarm received			1 bit	C	-	W	-	U		Low
3	General	Strong wind alarm received			1 bit	C	-	W	-	U		Low
4	General	Rain alarm received			1 bit	C	-	W	-	U		Low
5	General	Frost alarm received			1 bit	C	-	W	-	U		Low
10	Output A	Move blinds up/down			1 bit	C	-	W	-	U	up/down	Low
11	Output A	Adjust louvre/Stop moving			1 bit	C	-	W	-	U		Low
12	Output A	Limit travelling			1 bit	C	-	W	-	U	up/down	Low
13	Output A	Move to position(0%..100%)			1 byte	C	-	W	-	U	percentage (0..100%)	Low
14	Output A	Move louvre to position			1 byte	C	-	W	-	U	percentage (0..100%)	Low
15	Output A	Object status of position			1 byte	C	R	-	T	-	percentage (0..100%)	Low
16	Output A	Object status of louvre pos			1 byte	C	R	-	T	-	percentage (0..100%)	Low
17	Output A	Object status of upper pos			1 bit	C	R	-	T	-	up/down	Low
18	Output A	Object status of lower pos			1 bit	C	R	-	T	-	up/down	Low
19	Output A	Object status of auto			1 bit	C	R	-	T	-		Low
20	Output A	Object status of forced alarm			1 bit	C	R	-	T	-		Low
21	Output A	Set position 1/2			1 bit	C	-	W	-	U		Low
22	Output A	Set position 3/4			1 bit	C	-	W	-	U		Low
23	Output A	Move to position 1/2			1 bit	C	-	W	-	U		Low
24	Output A	Move to position 3/4			1 bit	C	-	W	-	U		Low
25	Output A	Activation of weather alarm			1 bit	C	-	W	-	U		Low
26	Output A Safety	Forced operation1			2 bit	C	-	W	-	U		Low
27	Output A Safety	Forced operation2			1 bit	C	-	W	-	U	switch	Low
28	Output A Safety	Forced operation3			1 bit	C	-	W	-	U	switch	Low
29	Output A	Activation of auto control			1 bit	C	-	W	-	U		Low
30	Output A Auto1	Sun="0 or 1"			1 bit	C	-	W	-	U	boolean	Low
31	Output A Auto1	Position percentage for sun			1 byte	C	-	W	-	U	percentage (0..100%)	Low
32	Output A Auto1	Louvre percentage for sun			1 byte	C	-	W	-	U	percentage (0..100%)	Low
34	Output A	Presence check(arrive/leave)			1 bit	C	-	W	-	U	boolean	Low
35	Output A Auto2	Heating			1 bit	C	-	W	-	U	boolean	Low
36	Output A Auto2	Cooling			1 bit	C	-	W	-	U	boolean	Low
37	Output A	Call scene number			1 byte	C	-	W	-	U		Low

6.2.1 Objects “Limit Travelling”

NO	Object name	Function	Flags	Data type
12, etc.	Output A	Limit travelling	C W U	EIS1 DPT 1.008 1 bit
This communication object is used to limit the range of shutter/blind travel. If the object receives a telegram with value="0", the shutter/blind moves upwards. If the object receives a telegram with value="1", the shutter/blind moves downwards. The shutter/blind stops automatically if it receives the set upper or lower limit position.				

6.2.2 Objects “Status of Position”

NO	Object name	Function	Flags	Data type
13, etc.	Output A	Move to position (0%-100%)	C W U	EIS10 DPT 5.001 1 bytes
This communication object is used for moving to any position according to the received value. The telegram value range is 0 (0%) to 255 (100%); the top value is "0" and the bottom value is "255".				

6.2.3 Objects “Move of Louvre Position”

NO	Object name	Function	Flags	Data type
14, etc.	Output A	Move louvre to position	C W U	EIS1 DPT 5.001 1 byte
This communication object is used for moving to any louvre position according to the received value. The telegram value range is 0 (0%) to 255 (100%); open is "0" and close is "255". Adjusting the louvre position is only available if the shutter/blind status is stop.				

6.2.4 Objects “Status of upper pos”

NO	Object name	Function	Flags	Data type
15, etc.	Output A	Position status object	C R T	DPT 5.001 1 byte
This communication object is used to send the position status when the shutter/blind position is changed. If the current position of the shutter/blind is changed and stopped, then the current position of the shutter/blind is sent out via this communication object.				

6.2.5 Objects “Louvre Position Status”

NO	Object name	Function	Flags	Data type
16, etc.	Output A	Louvre position status	C R T	EIS1 DPT 5.001 1 byte
This communication object is used to send the position status when the shutter/blind louvre position is changed. The current position of the louvre is sent out via this communication object.				

6.2.6 Objects “Upper position status”

NO	Object name	Function	Flags	Data type
17, etc.	Output A	Upper position status objects	C R U	EIS1 DPT 1.008 1 bit
This communication object is used to send the status when the shutter/blind moves to the upper position. The shutter actuator sends the value "1" via this communication object if the shutter/blind reaches the upper limit position.				

6.2.7 Objects “Status of lower position”

NO	Object name	Function	Flags	Data type
18, etc.	Output A	Lower position status objects	C R T	EIS1 DPT 1.008 1 bit
This communication object is used to send the status when the shutter/blind moves to the lower position. The shutter actuator sends the value "1" via this communication object if the shutter/blind reaches the lower limit position. The shutter actuator sends the value "0" via this communication object if the shutter/blind leaves the lower limit position.				

6.2.8 Objects “Status of auto”

NO	Object name	Function	Flags	Data type
19, etc.	Output A	Auto status object	C R T	EIS1 DPT 1.011 1 bit
This communication object is used to send the status when auto is activated or deactivated. The shutter/blind actuator sends the value "1" via this communication object if automatic control is activated. The shutter actuator sends the value "0" via this communication object if automatic control is deactivated.				

6.2.9 Objects “Status of forced operation”

NO	Object name	Function	Flags	Data type
20, etc.	Output A	Forced operation status object	C R T	EIS1 DPT 1.005 1 byte
This communication object is used to send the status when forced operation is activated or deactivated. The shutter/blind actuator sends the value "1" via this communication object if forced operation is activated. The shutter actuator sends the value "0" via this communication object if forced operation is deactivated.				

6.2.10 Objects “Set position 1/2”

NO	Object name	Function	Flags	Data type
21, etc.	Output A	Set position 1/2	C W U	EIS1 DPT 1.022 1 bit
This communication object is used to set the preset position. If this communication object receives a telegram with value="0", the current position is saved as the preset. value of position 1. If this communication object receives a telegram with value="1", the current position is saved as the preset value of position 2.				

6.2.11 Objects “Set position 3/4”

NO	Object name	Function	Flags	Data type
22, etc.	Output A	Set position 3/4	C W U	EIS14 DPT 1.022 1 bit
This communication object is used to set the preset position. If this communication object receives a telegram with value="0", the current position is saved as the preset value of position 3. If this communication object receives a telegram with value="1", the current position is saved as the preset value of position 4.				

6.2.12 Objects “Move to position 1/2”

NO	Object name	Function	Flags	Data type
24	Output A	Move to position 1/2	C W U	EIS1 DPT 1.022 1 bit
This communication object is used to move to the preset position. If this communication object receives a telegram, the shutter/blind moves to the preset position. If the value "0" is received, the shutter/blind moves to position 1. If the value "1" is received, the shutter/blind moves to position 2.				

6.2.13 Objects “Move to position 3/4”

NO	Object name	Function	Flags	Data type
26	Output A	Move to position 3/4	C W U	EIS1 DPT 1.022 1 bit
This communication object is used to move to the preset position. If this communication object receives a telegram, the shutter/blind moves to the preset position. If the value "0" is received, the shutter/blind moves to position 3. If the value "1" is received, the shutter/blind moves to position 4.				

6.2.14 Objects “Activation of weatheralarm“

NO	Object name	Function	Flags	Data type
25, etc.	Output A	Weather alarm activation	C W U	EIS1 DPT 1.011 1 bit
This communication object is used to activate the weather alarm. If this communication object receives a telegram with value="1", the weather alarm is activated. If this communication object receives a telegram with value="0", the weather alarm is deactivated.				

6.2.15 Objects “Forced operation 1“

NO	Object name	Function	Flags	Data type
26, etc.	Output A Safety	Forced operation 1	C W U	EIS1 DPT 2.008 2 bit
This communication object is used to force an operation. If this communication object receives a telegram with value ="2", binary ="10", the shutter/blind moves up and the other operation is disabled. If this communication object receives a telegram with value "3", binary= "11", the shutter/blind moves down and the other operation is disabled. If this communication object receives a telegram with value ="0", binary="00" or value ="1", binary="01", the shutter/blind moves to the "position of forced operation on reset" and the other operation is re-enabled.				

6.2.16 Objects “Forced operation 1“

NO	Object name	Function	Flags	Data type
27, etc.	Output A Safety	Forced operation 2	C W U	EIS1 DPT 1.001 2 bit
This communication object is used to force an operation. If this communication object receives a telegram with value ="1", binary ="01", the shutter/blind moves to the set position and the other operation is disabled. If this communication object receives a telegram with value ="0", binary="00", the shutter/blind moves to the "position of forced operation on reset" and the other operation is re-enabled.				

6.2.17 Objects “Forced operation 2“

NO	Object name	Function	Flags	Data type
28, etc.	Output A Safety	Forced operation 3	C W U	EIS1 DPT 1.001 1 bit
This communication object is used to force an operation. If this communication object receives a telegram with value ="1", binary ="01", the shutter/blind moves to the set position and the other operation is disabled. If this communication object receives a telegram with value ="0", binary="00", the shutter/blind moves to the "position of forced operation on reset" and the other operation is re-enabled.				

6.2.18 Objects “Activation of auto control“

NO	Object name	Function	Flags	Data type
29, etc.	Output A	Activation of auto control	C W U	EIS1 DPT 1.011 1 bit
This communication object is used to activate the auto control. If this communication object receives a telegram with value="1", the auto control is activated. If this communication object receives a telegram with the value "0", the auto control is deactivated.				

6.2.19 Objects “Sun = 0 or 1 “

NO	Object name	Function	Flags	Data type
20, etc.	Output A Auto1	Sun=0 or 1	C W U	EIS1 DPT 1.002 1 bit
This communication object is used to receive the Sun=0 or 1 signal. This communication object is only available when automatic control is activated. If this communication object receives a telegram with value="0", the shutter/blind moves to the set position "Moving for sun = 0" after "Delay time sun= 0". If this communication object receives a telegram with value="1", the shutter/blind moves to the set position "Moving for sun = 1" after "Delay time sun= 1".				

6.2.20 Objects “Move to position for sun“

NO	Object name	Function	Flags	Data type
31, etc.	Output A Auto1	Position percentage for sun	C W U	EIS1 DPT 5.001 1 byte
This communication object is used to move to position when auto is activated. The shutter/blind moves into position according to the received position value.				

6.2.21 Objects “Adjust louvre for sun“

NO	Object name	Function	Flags	Data type
32, etc.	Output A Auto1	Louvre percentage for sun	C W U	EIS1 DPT 5.001 1 byte
This communication object is used to move to position when auto is activated. The shutter/blind moves into louvre position according to the received louvre position value.				

6.2.22 Objects “Enable/Disable remote control“

NO	Object name	Function	Flags	Data type
33, etc.	Output A	Enable/Disable remote control	C W U	EIS1 DPT 1.003 1 bit
This communication object is used to disable the remote control. If this communication receives a telegram with value="1", the shutter/blind remote control is disabled.				

6.2.23 Objects “Presence“

NO	Object name	Function	Flags	Data type
34, etc.	Output A	Presence check (arrival/departure)	C W U	EIS1 DPT 1.002 1 bit
This communication object is used to receive the presence (arrival) signal or no presence (departure) signal. Only automatic control is activated. If a person leaves the room, this communication object receives a telegram with the value "0" after "Delay (0-3600 s) check when leaving "switching auto 2"". Automatic heating/cooling is activated and the shutter/blind moves to the set position according to the configuration of "Position on heating = "1" and sun = "1/0"" or "Position on cooling = "1" and sun = "0/1"". If a person enters the room, this communication object receives a telegram with the value="1" after "Delay (0-3600 s) check when arriving "switching to auto 1"". Automatic heating/cooling is deactivated, automatic sun is activated and the shutter/blind moves to the set position "Moving for sun= "0/1".				

6.2.24 Objects “Heating“

NO	Object name	Function	Flags	Data type
35, etc.	Output A	Heating	C W U	EIS1 DPT 1.002 1 bit
This communication object is used to receive the "Heating" signal. Only automatic control is activated. If this communication object receives a telegram with value="1", "Heating" is valid.				

6.2.25 Objects “Cooling“

NO	Object name	Function	Flags	Data type
36, etc.	Output A	Cooling	C W U	EIS1 DPT 1.002 1 bit
This communication object is used to receive the "Cooling" signal. Only automatic.				

6.2.26 "Call scene number" objects

NO	Object name	Function	Flags	Data type
37, etc.	Output N	Call scene number	C W U	DPT 18.001 1 byte

This communication object is used to control the scene. See the following explanation for scene control:
Telegram value:

C	R	N	N	N	N	N	N

C: 0 - Call scene
1 - Store scene (if scene allocated and the scene is the current switch state)

R: Reserved
N: Scene no. (bin: 000000-111111 = no.1-64)
e.g: Hexadecimal
00h------call scene 1 (if scene assigned)
01h------call scene 2 (if scene assigned)
3Fh------call scene 64 (if scene assigned)

80h------store scene 1 (if scene assigned)
81h------store scene 2 (if scene assigned) BFh------store scene 64 (if scene assigned)

7 Product disposal

This device must not be disposed of as unsorted household waste. Used devices must be disposed of correctly. Contact your local town council for more information.

8 ESYLUX manufacturer´s guarantee

ESYLUX products are tested in accordance with applicable regulations and manufactured with the utmost care. The guarantor, ESYLUX Deutschland GmbH, Postfach 1840, D-22908 Ahrensburg, Germany (for Germany) or the relevant ESYLUX distributor in your country (visit www.esylux.com for a complete overview) provides a guarantee against manufacturing/material defects in ESYLUX devices for a period of three years from the date of manufacture. This guarantee is independent of your legal rights with respect to the seller of the device.
The guarantee does not apply to natural wear and tear, changes/interference caused by environmental factors or damage in transit, nor to damage caused as a result of failure to follow the user or maintenance instructions and/or as a result of improper installation. Any illuminants or batteries supplied with the device are not covered by the guarantee.
The guarantee can only be honoured if the device is sent back with the invoice/receipt, unchanged, packed and with sufficient postage to the guarantor, along with a brief description of the fault, as soon as a defect has been identified. If the guarantee claim proves justified, the guarantor will, within a reasonable period, either repair the device or replace it. The guarantee does not cover further claims; in particular, the guarantor will not be liable for damages resulting from the device's defectiveness. If the claim is unfounded (e.g. because the guarantee has expired or the fault is not covered by the guarantee), then the guarantor may attempt to repair the device for you for a fee, keeping costs to a minimum.